UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN C. HALL and ANNA M. LACKNER

Appeal No. 2005-1149
Application No. 09/855,235

ON BRIEF

Before GARRIS, OWENS and PAWLIKOWSKI, Administrative Patent Judges.

GARRIS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal which involves claims 1-20.

The subject matter on appeal relates to an electrochemical battery having an anode of carbon, a cathode of a modified lithium metal oxide and a Schottky diode connected between the anode and the cathode. Further details of this appealed subject matter are set forth in representative independent claims 1, 12 and 15 which read as follows:

1. An electrochemical battery comprising at least two electrically interconnected electrochemical cells, each electrochemical cell comprising:

an anode comprising carbon;

a cathode comprising a modified lithium metal oxide including at least one additional element selected from the group consisting of nickel, aluminum, magnesium, titanium, and combinations thereof; and

a Schottky diode connected between the anode and the cathode of the electrochemical cell.

12. An electrochemical battery comprising at least two electrically interconnected electrochemical cells, each electrochemical cell comprising:

an anode;

a cathode comprising a cathode active material which exhibits a full-discharge cell potential that is more negative than a negative bypass voltage; and

a cell current bypass connected between the anode and the cathode, the cell current bypass conducting current between the anode and the cathode to short circuit the electrochemical cell only at voltages more negative than the negative bypass voltage.

15. A method of operating a battery system, comprising the steps of providing an electrochemical battery comprising at least two electrically interconnected electrochemical cells, each electrochemical cell comprising:

an anode comprising carbon,

a cathode comprising a modified lithium metal oxide including at least one additional element selected from the group consisting of nickel, aluminum, magnesium, titanium, and combinations thereof, and

a Schottky diode connected between the anode and the cathode;

fully discharging the battery; and thereafter operating the battery in a series of charging and discharging cycles.

The references set forth below are relied upon by the examiner as evidence of obviousness:

Andrieu et al. (Andrieu)	5,543,245	Aug. 6, 1996
Okada et al. (Okada)	6,027,836	Feb. 22, 2000
Kawano et al. (Kawano)	6,193,946	Feb. 27, 2001
Maeda et al. (Maeda)	6,428,930	Aug. 6, 2002

Claims 1-6, 8, 9 and 12-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Andrieu in view of Kawano, and claims 7 and 10 are correspondingly rejected over these references and further in view of Okada.

Additionally, claims 1-3, 5, 6, 8, 9 and 11-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Andrieu in view of Maeda.

On pages 3 and 4 of the brief and on page 1 of the reply brief, the appellants indicate that certain of the appealed claims do not stand or fall together. Accordingly, in assessing the merits of the above noted rejections, we have individually considered each of the appealed claims which have been separately grouped and argued by the appellants.

For a thorough understanding of the respective viewpoints expressed by the appellants and by the examiner concerning these rejections, we refer to the brief and reply brief and to the answer.

OPINION

We will sustain each of these rejections for the reasons well stated by the examiner in her answer. We add the following comments for emphasis.

There is no perceptible merit in the appellants' argument that Andrieu contains no teaching or suggestion of a diode connected between the anode and cathode of an electrochemical cell. As correctly explained by the examiner, figure 3 of Andrieu unquestionably depicts a diode symbol connected between the anode and cathode of patentee's battery cells 32. Contrary to the appellants' apparent belief, this drawing disclosure is not somehow negatived, and would not have been ignored by those skilled in the art, simply because the corresponding narrative disclosure in the paragraph bridging column 5 and 6 may inappropriately characterize this diode with the parenthetical expression "(not shown)" (column 5, line 66). Similarly, patentee's express teaching that "[t]hese diodes are Schottky type diodes, for example" (column 6, lines 2-3) is not somehow

negatived, and would not have been ignored by those skilled in this art, simply because figure 3 of Andrieu depicts the generic symbol for a diode rather than the symbol for a Schottky diode specifically. Indeed, such a specific symbol would have been inappropriate since Andrieu's column 6 teaching of a Schottky diode is by way of example only.

We are also unpersuaded by the appellants' argument that it would not have been obvious for an artisan to combine the applied reference teachings in the manner proposed by the examiner. For example, an artisan would have provided Andrieu's system and method with the specific type of modified lithium-carbon batteries taught by Kawano or Maeda (which correspond to those defined by the appealed claims), based upon a reasonable expectation of success, particularly in light of Andrieu's teaching of lithium-carbon batteries generally as suitable for use in his invention (see lines 48-51 in column 2). See In re O'Farrell, 853 F.2d 894, 903, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988)(for obviousness under Section 103, all that is required is a reasonable, not absolute, expectation of success).

Additionally, we find no convincing support for the appellants' allegation that the examiner has not addressed the features of certain appealed claims such as dependent claims

16 and 17 (e.g., see pages 11 and 16 of the brief as well as page 3 of the reply brief). These dependent claim features are expressly disclosed in column 4 of Kawano and column 7 of Maeda, and the examiner has specifically referred to these reference disclosures (e.g., see page 4 of the answer wherein the column 4 disclosure of Kawano is discussed and page 6 of the answer wherein the column 7 disclosure of Maeda is discussed).

In light of the foregoing and for the reasons well expressed in the answer, it is our determination that the reference evidence adduced by the examiner establishes a prima facie case of obviousness which the appellants have failed to successfully rebut with argument or evidence of nonobviousness. We hereby sustain, therefore, each of the Section 103 rejections advanced on this appeal. See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

The decision of the examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

BRADLEY R. GARRIS)
Administrative Patent Judge)
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TERRY J. OWENS) BOARD OF PATENT
Administrative Patent Judge) APPEALS AND
) INTERFERENCES
)
BEVERLY A. PAWLIKOWSKI)
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